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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,333	03/12/2004	Siegfried Hekimi	11202-009-999	9018

20583 7590 11/30/2006

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EXAMINER	
SAJJADI, FEREYDOUN GHOTB	
ART UNIT	PAPER NUMBER
1633	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,333	HEKIMI ET AL.	
	Examiner	Art Unit	
	Fereydoun G. Sajjadi	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *2-5 and 9-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-8 and 29-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/12/2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to papers filed October 23, 2006. Applicant's response to the restriction requirement of September 21, 2006 has been entered. No claims were cancelled or amended, and no new claims were added. Currently, claims 1-31 are pending in the application.

Election/Restrictions

Applicants' election of Group I (claims 1, 6-8 and 29-31), with traverse, drawn to a method of identifying a compound that modulates the level of a lipid or lipoprotein and a method for selecting nematodes, comprising contacting said compound with test nematodes and comparing a phenotype resulting from said compound's contact with said nematode, and dsc-4 gene and DSC-4 protein, is acknowledged. Applicants' species election of "length of defecation cycle", and "antisense nucleic acid" with traverse, is further acknowledged. Claims 2-5 and 9-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Applicants traverse the rejection, arguing that Groups II and III utilize the same test nematodes, that the Groups use the same test phenotype on said test nematodes for identifying new genes involved in lipid and lipoprotein level modulation, and are both directed to a gene that modulates the level of a lipid or lipoprotein in nematodes. Applicants conclude that the claims are technically linked and should be considered together as one Group. Applicant's arguments have been fully considered, but not found persuasive, because restriction requirements are set forth for reasons of patentability distinction between each independent invention so as to warrant separate search and search burden, as well as examination. There is no reason to expect the searches to be co-extensive because even though they are related in a subject matter, they are patentably distinct, and would require separate search with different search terms and different search strategy in the art. In the instant case the method of Group II (claim 2) is distinct from the method of Group III (claim 3), as the method of Group II is directed to subjecting nematodes to mutagenesis, and the subsequent isolation of a gene, that includes the step of cloning said mutated gene. By contrast, the method of Group III involves the step of contacting mutated nematodes with a nucleic acids that include antisense and double-stranded RNA molecule to

reduce gene expression. Each method is therefore distinct from the other, employing distinct steps directed to separate goals.

Applicants further argue that Group I claims should be considered together with Groups II and III, as all three methods are used to identify modulators (compounds or genes) and that a special technical feature links the claims of Groups I, II and III, i.e. the identification of a compound that modulates the level of lipids and lipoproteins. Thus, Groups I, II and III are not distinct and that unity of invention between the Groups does exist. Such is not persuasive, as the methods of Groups II and III are not directed to identifying modulators, and genes are not considered compounds to a person of skill in the art. Further, the method of Group I does not require a mutated test nematode. Moreover, Applicants appear to be arguing restriction practice under unity of invention, whereas the instant application is a U.S. case, restricted under 35 U.S.C. 121, using U.S. practice, and has not been restricted according to 35 U.S.C. 372.

Regarding the requirement to choose one specific dsc gene and its corresponding DSC protein, Applicants argue that both DSC 3 and 4 suppress clk-1 mutations in C. elegans and are thus linked by the same technical feature. Additionally citing MPEP 803.4 that ten sequences constitute a reasonable number for examination purposes and that there is not undue burden on the Office on their combined search. Such is not persuasive, because it is maintained that the two genes are structurally distinct. Applicants appear to again be citing unity of invention rules. Moreover, the waiver for up to 10 nucleotide sequences is permissive and not a requirement. The waiver went into effect in 1996, well before the exponential growth of the nucleic acid and protein databases. The present restriction requirement conforms with this policy as it has required that the application be restricted to one nucleotide sequence and its corresponding amino acid sequence. Thus, the pair, comprising two sequences is within the range of up to ten.

Applicants have traversed the species requirements for the different phenotypes and different nucleic acids, arguing that the phenotypes are technically related or linked. Such is not persuasive, as each species is distinct, capable of separate utility, requiring non-coextensive search and examination. Applicant timely traversed the restriction (election) requirement in the Paper filed October 23, 2006. The restriction requirement is still deemed proper and is therefore made FINAL. Elected claims 1, 6-8 and 29-31 are under current examination.

Objections to the Specification

The disclosure is objected to because it contains embedded hyperlinks and/or other form of browser-executable code. Further, an incorporation by reference by hyperlink or other form of browser executable code is not permitted. See 37 CFR 1.57(d) and MPEP § 608.01. Applicant is required to delete the embedded hyperlinks and/or other form of browser-executable codes. See MPEP § 608.01.

Failure to Comply with Nucleotide and /or Amino Acid Sequence Disclosures 37CFR §1.821-1.825

37 CFR § 1.821 (d) states: Where the description or claims of a patent application discuss a sequence that is set forth in the "Sequence Listing " in accordance with paragraph (c) of this section, reference must be made to the sequence by use of the sequence identifier, preceded by "SEQ ID NO: " in the text of the description or claims, even if the sequence is also embedded in the text of the description or claims of the patent application. The amino acid sequences recited in the sequence alignments of Figures 3A and 11A-F, as well as the amino acid Figure 10, do not include sequence identifiers. No corresponding SEQ ID NOS are present in the brief description of said Figures either.

As it is not clear whether the sequences of Figures 3A, 10 and 11A-F are present in the CRF listing, Applicant is required to check both the as filed paper and CRF sequence listings to ensure concordance with the sequences disclosed in the specification. If the sequences are present in the sequence listing as filed, the instant application may be placed in compliance with 37 CFR 1.821-1.825 by amending the brief description of the drawings in the specification to refer to the primer sequences by appropriate SEQ ID NOS. If the sequences are not present, then new paper and CRF sequences are required. See the notice to comply with the Sequence Rules set forth in 37CFR §1.821-1.825, included with this action.

Claim Rejections - 35 USC § 112 – Written Description

The following is a quotation of the first paragraph of 35 U.S.C. §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 6-8 and 29-31 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims embrace a large number of nematodes, including the phylum of roundworms and helminths, constituting a claimed genus. The specification fails to disclose any examples of the numerous nematodes that may be used as test nematodes and carry mutations in the clk-1 gene. The specification does not describe the structure or functional nature of any of the numerous mutant nematodes, other than for C. *elegans*. The specification, while disclosing clk mutants of C. *elegans*, fails to provide any examples for the numerous nematodes that may be used as test nematodes, and that thus constitute a claimed genus that encompasses nematodes yet to be discovered.

As the specification fails to disclose any species of nematodes other than C. *elegans*, the Artisan of skill could not predict that Applicant possessed any species of said agents.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail such that the Artisan can reasonably conclude that the inventor(s) had possession of the claimed invention. Such possession may be demonstrated by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and/or formulae that fully set forth the claimed invention. Possession may be shown by an actual reduction to practice, showing that the invention was "ready for patenting", or by describing distinguishing identifying characteristics sufficient to show that Applicant was in possession of the claimed invention (January 5, 2001 Fed. Reg., Vol. 66, No. 4, pp. 1099-11). Moreover, MPEP 2163 states:

> [A] biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence.

Applicant's attention is also directed to *In re Shokal*, 113 USPQ 283 (CCPA 1957), wherein it is stated:

> It appears to be well settled that a single species can rarely, if ever, afford sufficient support for a generic claim. *In re Soll*, 25 CCPA (Patents) 1309, 97 F2d 623, 38 USPQ 189; *In re Wahlforss*, 28 CCPA (Patents) 867, 117 F2d 270, 48 USPQ 397. The decisions do not however fix any definite number of species

> which will establish completion of a generic invention and it seems evident therefrom that such number will vary, depending on the circumstances of particular cases. Thus, in the case of small genus such as the halogens, consisting of four species, a reduction to practice of three, perhaps even two, might serve to complete the generic invention, while in the case of a genus comprising hundreds of species, a considerably larger number of reductions to practice would probably be necessary.

Overall, what these statements indicate is that the Applicant must provide adequate description of such core structure and function related to that core structure such that the Artisan of skill could determine the desired effect. Hence, the analysis above demonstrates that Applicant has not determined the core structure for full scope of the claimed genus.

In analyzing whether the written description requirement is met for genus claims, it is first determined whether a representative number of species have been described by their complete structure. Therefore, the breadth of the claims as reading on numerous mutant species of nematodes yet to be discovered; in view of the level of knowledge or skill in the art at the time of the invention, an Artisan of skill would not recognize from the disclosure that Applicant was in possession of the genus of test nematodes. Thus it is concluded that the written description requirement is not satisfied for the claimed genus.

In conclusion, this limited information is not deemed sufficient to reasonably convey to one skilled in the art that Applicant is in possession of numerous mutated or test nematodes, at the time the application was filed. Thus it is concluded that the written description requirement is not satisfied for the claimed genus.

Claim Rejections - 35 USC § 112 - Lack of Enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 6-8 and 29-31 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification is not enabling for a method of identifying a compound that modulates the level of a lipid or lipoprotein in any nematode; or a method of identifying any nematode having a modulated level of a lipid or lipoprotein following a treatment, as claimed.

This rejection is based on several issues, each indicating an absence of an enabling disclosure for identifying any nematode that can serve as a test nematode in the identification of compounds that modulate lipid or lipoprotein levels; and an absence of an enabling disclosure for a method of screening drugs useful in the treatment and prevention of diseases associated with undesirable or abnormal levels of lipids (e.g., cholesterol) or lipoproteins (e.g., LDL), as claimed. The deficiency was identified by the Office after analysis of the disclosure provided in the instant application. In determining whether Applicant's claims are enabled, it must be found that one of skill in the art at the time of invention by Applicant would not have had to perform "undue experimentation" to make and/or use the invention claimed. Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988). *Wands* states at page 1404:

> "Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

The Office has analyzed the specification in direct accordance to the factors outlined in *In re Wands*. MPEP § 2164.04 states: "[W]hile the analysis and conclusion of a lack of enablement are based on the factors discussed in MPEP § 2164.01(a) and the evidence as a whole, it is not necessary to discuss each factor in the written enablement rejection."

As a first issue, the instant specification does not provide an enabling disclosure for identifying any nematode that can serve as a test nematode in the identification of compounds that modulate lipid or lipoprotein levels. The specification teaches that "[M]utations in the

Caenorhabditis elegans gene clk-1 are highly pleiotropic, affecting the rates of physiological traits that occur over a wide range of timescales" (p. 1). "One of the features affected in clk-1 mutants is the defecation cycle." (p. 3). Further, clk-1 encodes a mitochondrial protein that encodes a hydroxylase required for the biosynthesis of ubiquinone (UQ), a prenylated benzoquinone lipid that functions as a transporter of electron complexes II and III in the respiratory chain (p. 2). "It is however, not clear how the absence of UQ relates to the other mutant phenotypes as there is no correlation between this biochemical phenotype and the severity of the overall phenotype." (p. 3). "The periodicity of the defecation cycle can be altered by mutations in at least 13 genes (Dec phenotype)." (p. 3).

Therefore, a nematode test system to be used in a compound screening system to identify compounds that modulate lipid or lipoprotein levels, based on the phenotype of altered length of defecation cycle, would require at least a clk-1 mutation or its equivalent. As both the prior art and the instant specification are silent on mutations other than clk-1 in C. *elegans*, associated with lipid metabolism, that further affect the length of the defecation cycle, a person of skill in the art would need to engage in further experimentation to create and characterize numerous other nematodes to produce test nematodes appropriate for compound screening. As the only nematode that has been extensively genetically characterized to date is C. *elegans*, such experimentation on other nematodes would not be routine and would further be undue.

As a second issue, the instant specification does not provide an enabling disclosure for a method of identifying a compound that modulates the level of a lipid or lipoprotein, in a test nematode comprising at least one mutation in the clk-1 gene; or at least one mutation in the clk-1 gene and at least one mutation in the dsc-4 gene.

The specification describes the C. *elegans* mutants as "a system for screening drugs useful in the treatment and prevention of diseases associated with undesirable or abnormal levels of lipids (e.g., cholesterol) or lipoproteins (e.g., LDL), such as cardiovascular disorders and dyslipidemia." (Abstract). The specification additionally states: One of the main objectives of the present invention is to provide methods for the selection of compounds for use in the field of metabolism disorders including but not limited to cardiovascular diseases and dyslipidemia disorders. The invention features a platform for screening drugs useful in the treatment and prevention of such metabolism disorders in humans." The foregoing appears to be based at least

in part on the following: "[G]iven that dsc-4 encodes an activity necessary for LDL-like lipoprotein secretion, and that lowering LDL-like lipoprotein secretion or lowering cholesterol has the same effect on the rate of germline development as dsc-3, the inventors conclude that dsc-3 indeed affects cholesterol homeostasis in worms as its homologs do in humans. The sequence analysis of dsc-3 supports the invention of using dsc-3 (and its homologs, including human homologs) as a target to screen for compounds for the treatment and/or prevention of atherosclerosis, liver and intestinal problems related to cholesterol metabolism in humans." (pp. 123-124, bridging). Therefore, the claims embrace methods for identifying compounds in test nematodes as pharmaceutical candidates for the treatment and prevention of lipid related disorders and numerous human disorders ranging from cardiovascular disease to dislipidemia.

The specification states: "Although not intending to be bound by any mechanism of action, in essence, some of the phenotypes displayed by clk-1 mutant nematodes (e.g., slow germline development and increased defecation cycle length) are due in part to the accumulation of a pool of native (unoxidized) LDL-like lipoprotein." (p. 19). The specification describes the isolation of the dsc-4 gene (as "a suppressor of the slow defecation phenotype of clk-1 mutants") on pages 107-111; stating: "Although the dsc-4 mutation does not suppress all aspects of the clk-1 phenotype" (p. 112). The specification additionally teaches that dsc-4 encodes a protein, which is similar in sequence to the large subunit of the microsomal triglyceride transfer protein, MTP. "In humans, mutations in the large subunit of MTP cause abetalipoproteinemia (ABL), a severe deficiency in LDL secretion". Further teaching: " The mutation sites of dsc-4 (qm182) were in the apo B-binding domain and were different from those found in abetalipoproteinemia patients." (p. 114). It is noted that C. *elegans* cannot synthesize cholesterol (p. 119). Moreover, in experiments aimed at phenocopying dsc-4 mutations by cholesterol depletion of C. *elegans*, the specification states: "in general, the effect of cholesterol depletion was much more severe and included numerous defects not seen in dsc-4 mutants...One possibility is that dsc-4 polypeptide is not as stringently required for secretion of LDL-like lipoproteins in worms as is MTP in mammals. Another possibility is that there are other pathways of cholesterol redistribution from the intestine to peripheral tissues in worms" (p. 119).

It is however, unclear how a of clk-1 mutant (in the absence of additional dsc mutations) may be used as a test nematode in modulating lipid or lipoprotein levels, as the clk-1 product is

not required for LDL-like lipoprotein secretion. Further, when given the broadest reasonable interpretation, the instant claims read on the modulation of lipid or lipoprotein levels in a nematode (both wild type and clk-1), by the simple ingestion of bacteria on plates containing or absent added cholesterol.

The specification and the prior art are silent on any association between clk-1 mutation and any disease in humans. It is further apparent from the foregoing that there is no clear nexus between clk-1 and dsc-4 mutations in C. *elegans* and cholesterol regulation in humans. Therefore, the instant specification does not disclose the claimed invention in a manner sufficiently clear and complete for the claimed invention to be carried out by a person skilled in the art, as the description fails to provide any examples of contacting test nematodes with any compounds that may be effective for the treatment and/or prevention of atherosclerosis, liver and intestinal problems related to cholesterol metabolism in humans.

A person of skill in the art would therefore have to engage in additional experimentation to define conditions wherein test nematodes may be produced that comprise mutations correlated with cholesterol abnormality in humans, and to further employ such nematodes as models for screening compounds for treatment of cardiovascular, liver and intestinal disease in humans. Such further experimentation is regarded as undue and unpredictable, in view of the absence of sufficient guidance in either the instant specification or the prior art.

Therefore, in view of the lack of guidance provided by the specification for the regarding the establishment of a nexus between clk-1 and dsc-4 mutations and cholesterol regulation in humans, and the lack of guidance for the methods of identifying compounds that modulate lipid or lipoproteins in a nematode that may be used for treatment and/or prevention of disease in humans, it would have required undue experimentation for one of skill in the art to practice applicant's invention as claimed. Hence, absent a strong showing by Applicant, in the way of specific guidance and direction, and/or working examples demonstrating the same, such invention as claimed by Applicant is not enabled.

Claim Rejections - 35 USC § 112- Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. §112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 6-8 and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 are unclear. Claim 1 is directed to a method comprising contacting a compound with "test nematodes"; and comparing a phenotype of said test nematodes with the phenotype of nematodes not contacted with said compound, wherein the phenotype is the length of the defecation cycle. Claim 6 (b) recites "identifying test nematodes that exhibit a phenotype tha tis modified as compared to the phenotype of nematodes that has not been treated". However, the "test nematode" may be any nematode, including a wild type or a clk-1 nematode subjected to contact with a compound. Therefore, it is not clear how a test nematode differs from a regular nematode.

Claim 6 is also rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: contacting clk-1 test nematodes with a compound to modulate the level of a lipid or lipoprotein. Claim 6 recites treating test nematodes to modulate the level of a lipid or liporotein. As the method does not define how said treating takes place, the essential step of contacting clk-1 test methods with a compound to modulate the level of a lipid or lipoprotein is missing. Thus it is not clear how said treating may result in any form of lipid level modulation.

Claims 7, 8, and 29-31 depend from claims 1 and 6 and have been included in the rejection, as they do not recite any limitations that would obviate their rejection.

Conclusion

Claims 1, 6-8 and 29-31 are not allowable.

Any inquiry concerning this communication or earlier communications regarding the formalities should be directed to Patent Analyst William Phillips, whose telephone number is **(571) 272-0548**. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Fereydoun G. Sajjadi whose telephone number is **(571) 272-3311**. The examiner can normally be reached Monday through Friday, between 7:00 am-4:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on **(571) 272-2739**. The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

For all other customer support, please call the USPTO Call Center (UCC) at **(800) 786-9199**.

Fereydoun G. Sajjadi, Ph.D.
Examiner, USPTO, AU 1633

ANNE M. WEHBE' PH.D
PRIMARY EXAMINER

Notice to Comply	Application No. 10/800,333	Applicant(s) Hekimi et al.	
	Examiner Fereydoun Sajjadi	Art Unit 1633	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e). Therefore a search of the correct sequence is not possible.

☒ 7. Other: The specification contains amino acid sequences without SEQ ID NO identifiers.

Applicant Must Provide:

☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☒ An initial or substitute paper copy of the "Sequence Listing", **as well as an amendment specifically directing its entry into the application**.

☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216 or (703) 308-2923
For CRF Submission Help, call (703) 308-4212 or 308-2923
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APPLICATION NO. /CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10/800,333	3/12/2004	Siegfired Hekimi	11202-009-999

EXAMINER	
Fereydoun G. Sajjadi	
ART UNIT	**PAPER**
1633	

DATE MAILED:

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Commissioner of Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Sequence identifiers are missing for some of the sequences listed in the specification. Applicant is required to thoroughly review the specification and comply with all sequence rules. For example, the following sequences in the specification do not have sequence identifiers: the amino acid sequences recited in the sequence alignments of Figures 3A and 11A-F, as well as the amino acid Figure 10, do not include sequence identifiers. No corresponding SEQ ID NOS are present in the brief description of said Figures either.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the

reply.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fereydoun G. Sajjadi whose telephone number is **(571) 272-3311**. The examiner can normally be reached Monday through Friday, between 7:00 am-4:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on **(571) 272-0739**. The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

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Fereydoun G. Sajjadi, Ph.D.
Examiner, Art Unit 1633